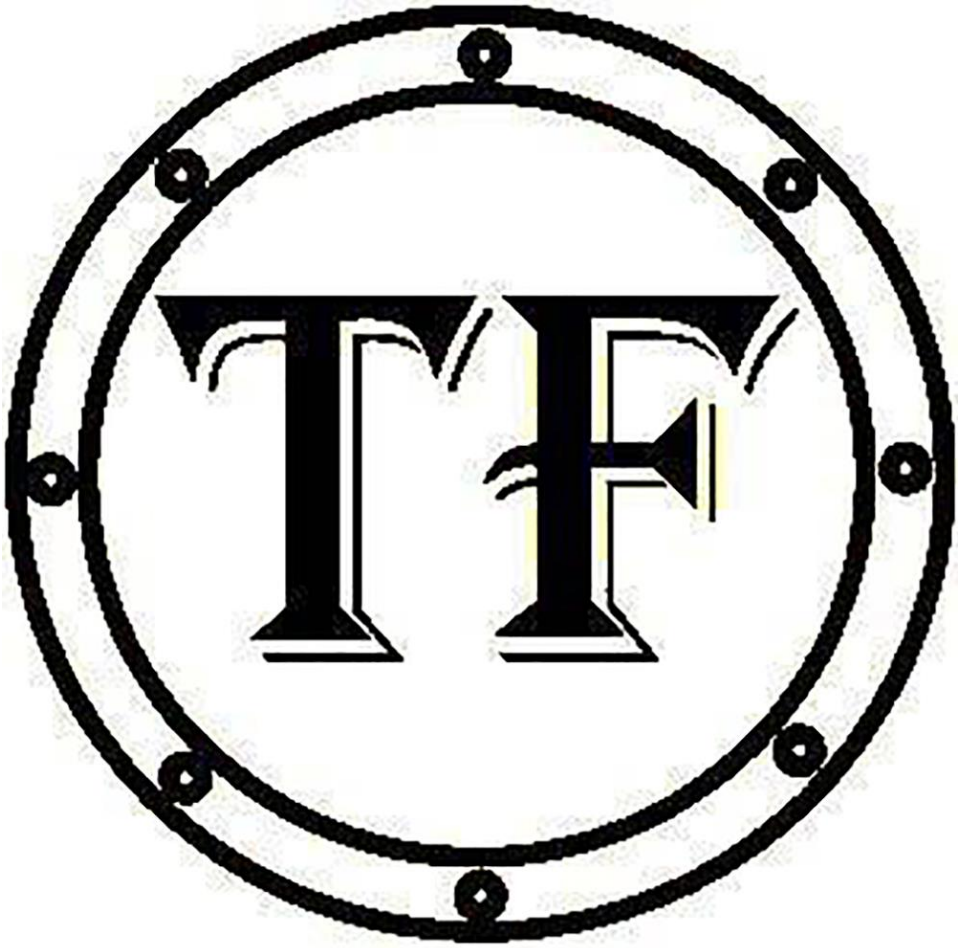
Flange Types Basics

Flanges provide a reliable and efficient way to connect pipes and other components. Additionally, they help ensure the security of the system.

What Is A “Flange”?

Per Merriam Webster , ” A rib or rim for strength, for guiding, or for attachment to another object”.



In layman’s terms, a flange is a part that allows two objects to be mated together through various processes. (Pipe to Pipe, Pipe to Tank, Pressure Vessel to……etc)

A flange serves as a protruding rim or collar employed to link two pipes or other constituent parts. Flanges are typically made of metal but can also be made of plastic or other materials.

Flanges are used in a variety of applications, including:

Piping systems:

Flanges play a crucial role in connecting pipes across various industries, such as oil and gas, chemical, or even water treatment.

Machinery:

Flanges are also used to connect components in machinery, such as engines and turbines.

Structural applications:

Flanges, such as bridges and buildings, are also used in structural applications.

Flanges are typically classified by their type, size, and material. The flange type depends on the application and the type of connection required.

The size of the flange is determined by the diameter of the pipe or other component it will be connecting. The application and the environmental conditions determine the flange's material to which it'll be exposed.

Flanges are an important part of many engineering systems. They provide a reliable and efficient way to connect components and transfer fluids and gases.

Check out the options below for more Flange Basics!

- Flange Types
- Blind Flanges
- Lap Joint Flanges
- Slip-On Flanges
- Socket Weld Flanges
- Threaded Flanges
- Weld Neck Flanges
- Custom Flanges
- Flange Specs

- Flange Specifications
- AWWA Flanges
- ANSI Flanges
- ASME Flanges
- DIN Flanges
- JIS Flanges
- Flange Materials
- Alloy Pipe Flanges
- Carbon Steel Flanges
- High Yield Flanges
- Plate Flanges
- Stainless Steel Flanges
- Chrome Flanges
- Duplex Flanges
- Titanium Flanges
- Custom Flanges

In conclusion, selecting the right flange type is essential for ensuring safety, efficiency, and durability in any piping system. Weld neck flanges, known for their strength and reliability, are ideal for

handling higher pressures due to their seamless connection via butt welds.

Other options, such as slip-on or lap joint flanges, cater to specific applications where flexibility or cost savings are priorities. Each flange type offers unique advantages depending on your system's needs.

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Which of all types of flanges is most often used?

The slip-on flange is one of the most commonly used flange types due to its ease of installation and cost-effectiveness. It is widely applied in low-pressure, non-critical systems where welding is required but precise alignment is not crucial.

What are three 3 basic flange face types?

Raised Face (RF): Features a small raised area around the bore for better gasket compression, commonly used in high-pressure applications.

Flat Face (FF): A flat surface across the flange face, suitable for low-pressure systems and softer gasket materials.

Ring Type Joint (RTJ): Features a grooved face that accommodates a metallic ring gasket, designed for high-pressure and high-temperature environments.

What is the strongest type of pipe flange?

The weld neck flange is the strongest type of pipe flange. Its long, tapered neck provides superior stress distribution and structural integrity, making it ideal for high-pressure and high-temperature systems, as well as applications involving severe conditions like vibration or thermal expansion.

What are the different types of flange?

The main types of pipe flanges include weld neck flange, slip-on flange, socket weld flange, lap joint flange, threaded flange, blind flange and ring type joint (RTJ) flange.